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Appendix C
Clean Copy of Amended Paragraphs in U.S. Application Serial No. 09/823,196

(clean copies of spec taken from page 2 of amdt)

Please replace paragraph 1, page 27, with the following paragraph:

Hafnia films were grown with the precursors listed in Table I. Precursor solutions were prepared at 0.1M Hf in octane. Substrate of (100) Si was prepared with an SC1 treatment followed by dilute HF to remove any SiO_2 on the surface. The generic process conditions for the experiments are shown in Table II. Initially, films were grown at 550°C under three different reactive gas conditions: Ar, N_2O and O_2. Results described below indicated that N_2O was the preferred ambient. A pressure-temperature matrix was performed for each precursor using the N_2O ambient as shown in Figures 2A and 2B. Figures 2A and 2B show the process space experiments for TDEAHf and TDMAHf precursors, where the various experiments are identified as GXXX. At the end, a film targeting 50Å was grown from each precursor to be used for TEM examination of the interface with Si.

Please replace paragraph 1, page 30, with the following paragraph:

Silica films were grown with the silicon precursors listed in Table III, TDEASi and TDMASi. Precursor solutions were prepared at 0.1M Si in octane. Substrates of (100) Si were prepared with an SC1 treatment followed by dilute HF to remove any native SiO_2. The generic process conditions for the experiments are shown in Table IV. Results from the growth of hafnia films encouraged us to center these initial experiments on growth in an N_2O atmosphere although growth in O_2 or other oxidizer could be used at temperatures at or below 500°C. A limited pressure-temperature matrix was performed for each Si precursor using the N_2O ambient as shown in Figure 7A and 7B, where the various experiments are identified as GXXX.

Please replace paragraph 3, page 31, with the following paragraph:

Growth rates of SiO_2 were less than 3Å/min under all conditions as shown in Figure 8 and Figure 9. There is some indication that the TDEASi may form silica films a little bit more readily, however, none of the growth rates are sufficient for the two precursors under the instant conditions.

Please replace paragraph 4, page 31, with the following paragraph:

The growth of SiO_2 with only the TDEAHf, as measured by the subtraction of ellipsometric thickness from XRF thickness (shown in Figure 10) was greater than that from the TDEASi precursor alone. Films grown from the precursor mixture (TDEAHf+TDEASi) showed still higher SiO_2 growth rates as shown in Figure 11. This increased growth rate is unexpected and should be quite useful for the growth of hafnium silicate films of uniform Hf:Si composition through the thickness of the film.